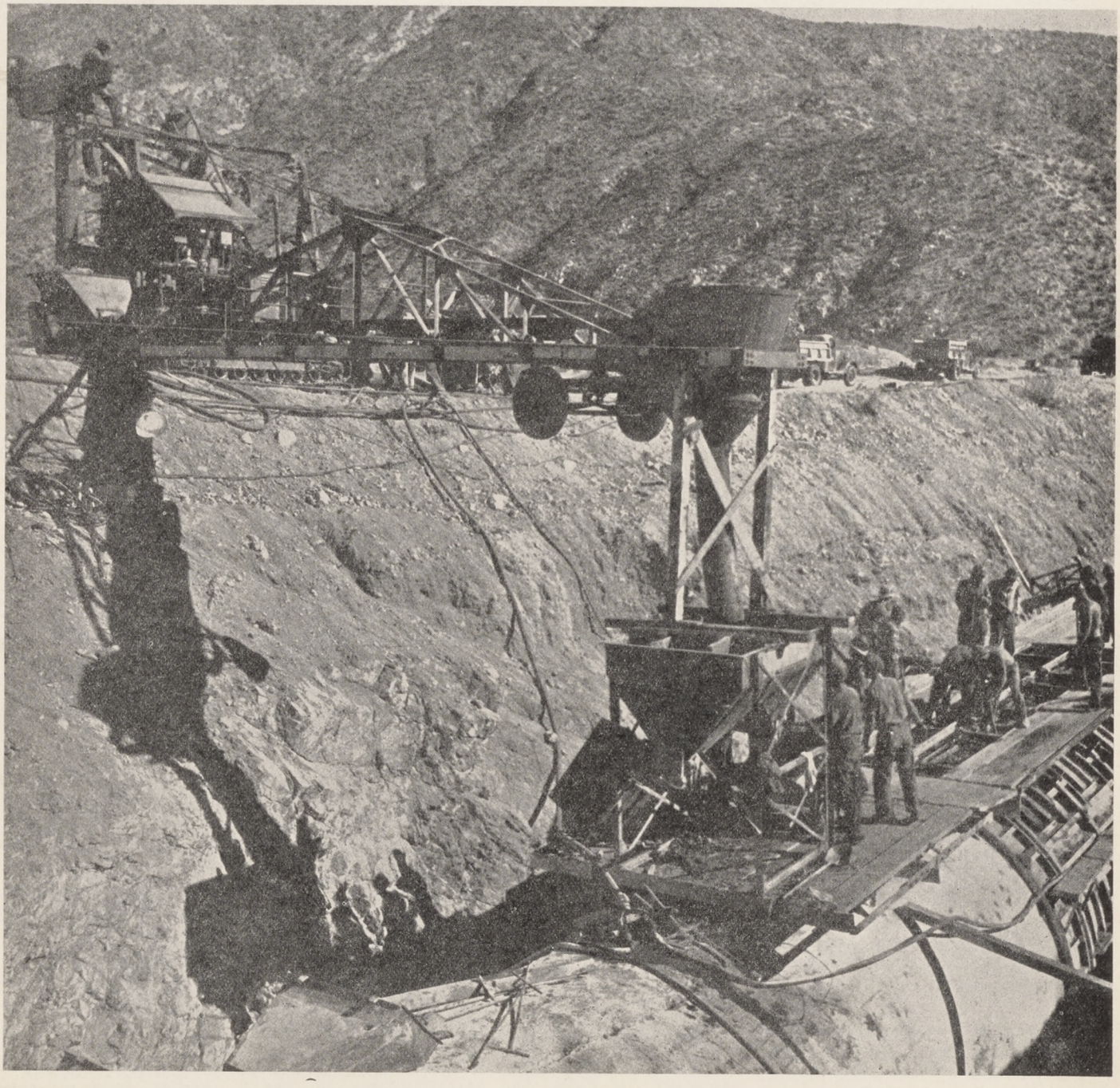
• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Vol. III. DECEMBER 10, 1936 No. 23



Pouring concrete in the Blind Canyon Siphon. The machine used is a combination mixer and portable conveyor. Concrete is distributed from the hopper in buggies.

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AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

LOS ANGELES, CALIFORNIA

Published twice monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. III December 10, 1936 No. 23

San Diego and M.W.D. Officials Discuss Water Promlems

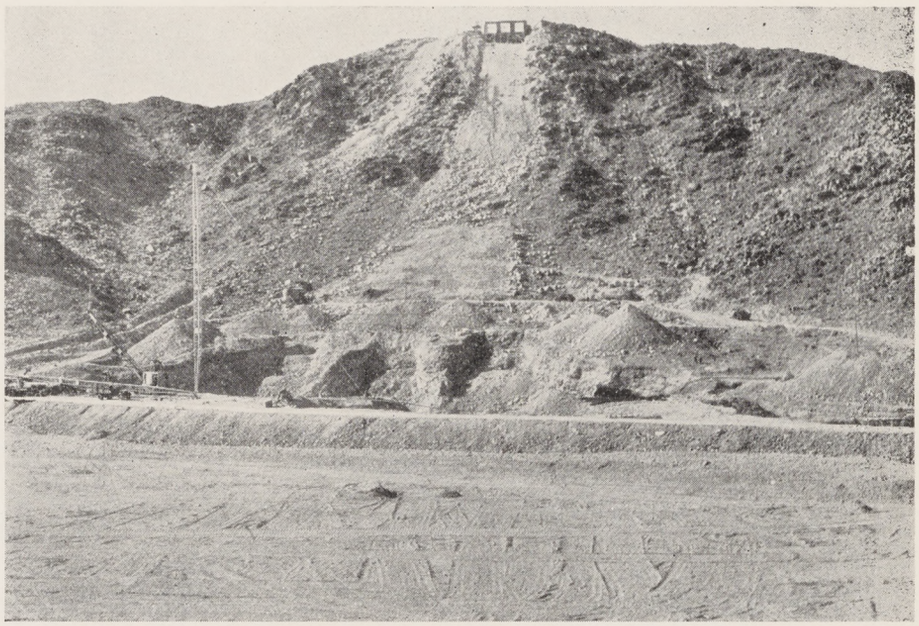
Acting on the request of the City of San Diego, officials of the Metropolitan Water District and of San Diego met in Los Angeles on Wednesday, December 2, to discuss the possibility of San Diego securing Colorado River water through the Colorado River Aqueduct.

Plans for the development of an additional water supply for San Diego, it is understood, are now being formulated by officials of that city. It was in line with this program that the meeting was arranged with the District's officials.

It has been announced that San Diego's water supply studies are being made by an engineering consulting board composed of Louis C. Hill of Los Angeles, Lester S. Ready of Berkeley, and Dr. John P. Buwalda of Pasadena. Meeting with this board on December 2 were the Water Problems Committee of the M.W.D. Board of Directors, and General Manager Weymouth. The water committee was headed by Vice-Chairman Franklin Thomas of Pasadena, and Directors John R. Richards and Victor H. Rossetti of Los Angeles, Director J. H. Ramboz of San Marino, and Director S. H. Finley of Santa Ana.

During the past year the Board of Directors has received inquiries concerning the possibility of joining the District from cities and areas totaling about 400,000 acres and extending all the way from Ventura County to San Diego. Included in these areas is most of the territory in Orange County and the Foothill District east of Glendora and in the vicinity of Pomona and Puente.

The Board of Directors recently ruled that Colorado River Aqueduct water will only be sold to cities and areas that are members of the M.W.D.



Excavation at the Eagle Mountain Pumping Plant. Delivery lines will go up the excavated channel in the center of the picture. The plant forebay will occupy the cleared area shown in the lower part of the scene.

Directory

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Division 4.....R. C. Booth
Divisions 5 & 6.....J. B. Bond
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Transmission.....Robert N. Allen

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(Main Aqueduct Tunnels)

Colorado River, Copper Basin and Whipple Mt. Tunnels, Walsh Construction Co., W. A. Huntington and L. M. Ramey, Tunnel Supts.

Coxcomb and East Iron Mt. Tunnels, Winston Bros., R. V. Johnson, Gen. Supt.

Iron Mt. Tunnel, West Portal, Utah Construction Co., Ben Arp, Gen. Supt.

East Eagle Mt. Tunnel and West Eagle Mt. Tunnel, east portion, Broderick & Gordon, John Will, Gen. Supt.

Coachella Tunnel, Dist. Force Acct., R. C. Booth, Gen. Supt.

East Coachella Tunnel and 1000 Palms Tunnel, Concrete, V. T. Davis, Supt., J. C. Fischer, Guy Taylor, Gen. Foremen.

All Coachella Siphon Construction, M. Hjalmarson, Supt.

West Coachella Tunnels and Conduits, Concrete, Edwin Noon, Supt.

Little Morongo, Excavation, R. Ferry, Supt.

San Jacinto Tunnel, District Force Acct., B. C. Leadbetter, Gen. Supt.; A. L. Simpson, John Austin and C. E. Sides, Tunnel Supts.; Chas. F. Thomas, Jr., Supt.

Valverde Tunnel ,Dravo Contr. Co., R. W. Remp, Gen. Supt.

(Distribution Tunnels)

Monrovia Tunnels Nos. 1, 2 and 3, West Construction Co., H. E. Carleton, Gen. Supt.; O. V. Humason, Peter Brisbols and Luther Dennis, Tunnel Supts.

Pasadena Tunnel, San Rafael Tunnels Nos. 1 and 2, and Monrovia Tunnel No. 4, L. E. Dixon Co., Bent Bros., Inc., and Johnson, Inc., S. D. Hickley, G. A. Scott and W. N. Evans, Supts.

(Canal, Siphon, Conduit)

Schedules Nos. 1, 1A, 1B, 10, 10A, 10B, 11, 11A, 11B, 11C, 13, 13A, and 13B, Aqueduct Construction Co., S. T. Corfield, Gen. Supt.; Charles Harlowe, Jr., Excav. Supt.

Schedules Nos. 2, 2A, 2B, 3, 3A, 3B, 7, and 7A, Barrett & Hilp and Macco Corp.; H. W. McKinley, Supt.

Schedules Nos. 4, 4A, 5, and 5A, Jahn & Bressi Construction Co., Joseph Muscolo, Gen. Supt.; Dominick Bressi, Asst. Gen Supt.

Schedules Nos. 6, 8, 8A, and 8B, Clyde W. Wood and M. J. Bevanda, A. F. Weesner, Gen. Supt.

Schedules Nos. 9, 9A, 9B, and 9C, The Utah Construction Co., Ben Arp, Gen. Supt.

Schedules Nos. 12 and 12A, Three Companies, Inc., John Will, Supt.

Schedules Nos. 14, 15, and 16, Thompson - Starrett Co., Inc., Rodney Smith, Gen. Supt.; William Hayes, Excav. Supt.

Schedule 17, Dist. Force Acct., H. Hjalmarson, Supt., (Fan Hill).

Schedules Nos. 18, 19, and 20, J. F. Shea Co., Inc., J. G. Shea, Gen. Mgr.; H. F. Rennebohm, Supt.

Schedules Nos. 20A, 20B, 20C, 21, 22, and 23, The Griffith Co., Harry Davis, Supt.

(Distribution Pipe Line)

Schedules No. 4P and 5P, American Concrete & Steel Pipe Co., Wm. A. Whiting, Gen Supt.; D. H. Rankin, Plant Supt. and Const. Supt.

Schedules 6P and 7P, J. F. Shea Co., Inc., J. G. Shea, Gen. Mgr.; Ed. H. Shea, Gen. Supt.

Schedules 8P, United Concrete Pipe Corp., John Huber, Plant Supt.; Charles Johnston, Const. Supt.

Schedules 2B and 2S, Western Pipe & Steel Co., L. L. White, Supt.

(Dams)

Cajalco dam, The Griffith Co., Harry Davis, Gen. Supt.

Parker dam, Six Cos., Inc., Frank Crowe, Gen, Supt.; E. A. Moritz, Eng. in charge.

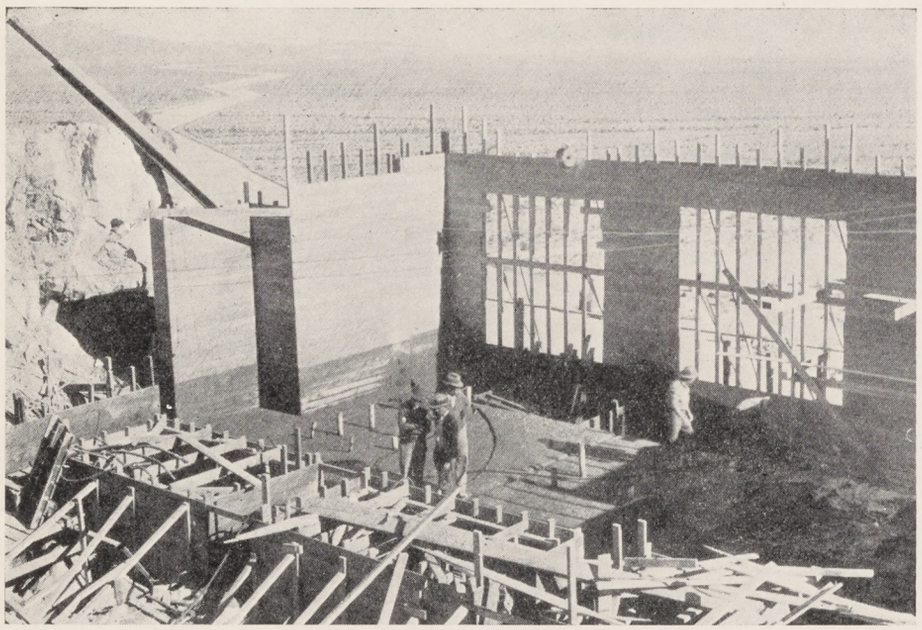
(Pumping Plants)

Intake and Gene, Winston Bros. and Crowell, R. A. Crowell, Supt., T. J. Hillman, Engineer.

Iron Mountain, Wood and Bevanda; Grant Miner, Supt.

Eagle Mountain, L. E. Dixon Co.; S. H. Strohacker, Supt.

Hayfield, Dixon and Case; Crawford Strohacker, Supt.



Concrete base and form work for the surge chamber at the top of the Eagle Mountain pump lift. This is the structure shown at the top of the view on page 2. The surge chamber will be 82 feet high and 30 feet in diameter.

Construction Highlights Along the Line

Monrovia Tunnels 1 and 2

Concreting of the main portions of Monrovia tunnels Nos. 1 and 2, being constructed by the West Construction Co. on the Distribution System, was completed on December 3. Still remaining to be concreted is the junction chamber and structure at the Y of the two tunnels.

Batching for both tunnels was handled from the contractor's plant in San Gabriel Canyon just below the Morris Dam. The junction of the two tunnels is approximately 50 feet inside, or east, of the west portal of Monrovia 1. This tunnel is 7,868 feet long, running east and west between Glendora and San Gabriel Canyon. Tunnel No. 2 is 940 feet long and extends north from the junction toward the Morris Dam.

Concreting was started in Monrovia 1 on June 10, 1936. Like other Distribution tunnels, Monrovia's 1 and 2 are circular and have a lined diameter of ten feet, the pouring of the entire tunnel section being in one operation. Since the pouring was started the contractor's crews have averaged 91 lineal feet per working day, with a maximum of 140 lineal feet in one day.

Allan Campbell is the M.W.D. senior inspector on the job, and Ernie Penn is the contractor's concrete superintendent, with Pierpont Wambold, Karl Hamann, and Les Owens as shifters.

Canal Schedule 11

Aqueduct Construction Co. crews started canal lining on Schedule 11 on November 23, and had lined 4,520 lineal feet by Saturday of the week ending December 5. This is the last canal schedule to be started on the aqueduct.

* * *

Transmission Lines

Fritz Ziebarth's crews on the Boulder transmission lines have completed the erection of towers on all but two miles of the leg between the dam and the Iron Mountain pumping plant and have erected a total of 582 towers to date on both sections of the line, or 62.2 per cent of the total required. At the same time they have strung 147 miles of conductor, or 62.1 per cent of the 237 circuit miles of conductor to be placed.

* * *

San Jacinto, West Portal

Down at the West Portal of the San Jacinto tunnel, Superintendent Thomas' concrete crews are off to a good start in pouring the arch in the western end of the big tunnel. Using a double unit Pumpcrete, the pouring of arch was started at a point 529 feet west of Potrero shaft on November 12. Working west from this point, they had placed 4,555 lineal feet on December 4, with a number of "best days" of 330 lineal feet.

Try This In Any Tea 'Shoppe'

Chief Clerk F. W. Carleton of the Division 4 force account staff has been counting potatoes instead of sheep in an effort to go to sleep at nights, and as a result has dug up some vital statistics on food consumption in the Coachella tunnel camps since construction was started.

Proving that aqueduct building is a man's job, and that tunnel men do eat, his summary reveals that in the first three and a half years of construction on the Coachellas, more than 4,430 *tons* of food were consumed. During this period, an average of 900 men per day were fed in the M.W.D. mess halls on Division 4. At the present time, more than 1,400 engineers and construction men are employed in this division.

Would Require Train 8 Miles Long

Figured on the basis of the food consumption of the Coachella aqueduckers, the entire army of aqueduct builders have required more than 40,000 tons of foodstuffs since construction was started four years ago. A few "end to end" calculations reveal that this would require a train of box cars nearly eight miles long to transport it.

8.88 Lbs. Per Man Per Day

During the year 1935, the average food consumption by the Coachella tunnel crews was nearly nine pounds (8.88) per man per day. Figure that out on your slide rule to see how often the average aqueducker eats his own weight in food.

Among the quantities of food required as fuel for man power on the job were 324 tons of beef, 44 tons of coffee (259,560 gallons), 53 tons of butter, 220,000 gallons of fresh milk, more than 95,000 chickens, and over 2,323,000 eggs (we'll skip the hen a day, egg a day problem).

34 Miles of Sausage

Fred Carleton did a few "end to end" computations on his own calculating machine and discovered that the 48,373 pounds of breakfast sausage eaten—if they had been placed end to end—would have extended for a distance of 34 miles. That is, they would have extended clear through all of the Coachella tunnels, with a half mile to the good at each end.

In case anyone's still hungry, here are some more of the pleasant details: mutton, 58 tons; pork, 61 tons; ham, 50 tons; bacon, 45 tons; potatoes, 314 tons; wieners, 7 tons; and sugar, 170 tons (figure this out—340,000 pounds of sugar to 260,000 gallons of coffee).

TUNNELS

November 1 to November 30, 1936

TUNNEL EXCAVATION (MILES)

	Completed	Remaining
Aqueduct	86.79	5.32
Distribution	15.34	0.86
Total	102.13	6.18

*TUNNEL LINING (MILES)

	Completed	Remaining
Aqueduct	67.95	24.16
Distribution	5.15	11.01
Total	73.10	35.17

*Arch considered to equal 0.9 completed section.

TUNNEL PROGRESS

CONTRACTOR	TUNNEL	LENGTH IN FEET	EXCAVATION IN FEET: NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAINING	LINING IN FEET: ARCH OR INVERT	NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAINING
AQUEDUCT—CONTRACT													
WALSH CONSTRUCTION CO.	COLORADO RIVER	5,482		Completed		5,482	0	Arch			0	5,475	7
								Invert			0	5,475	7
	COPPER BASIN NO. 1	705		Completed		705	0	Arch			0	696	9
								Invert			0	696	9
	COPPER BASIN NO. 2	11,568		Completed		11,568	0	Arch			0	11,568	0
								Invert			0	11,568	0
	WHIPPLE MOUNTAIN	(32,238)				(32,238)	(0)	Invert			0	0	(32,238)
	East from Adit	18,336		Completed		18,336	0	Arch			0	18,327	9
	West from Adit	13,902		Completed		13,902	0	Arch			0	13,902	0
WINSTON BROTHERS	IRON MT. (E. PORTION)	(23.645)				(23.645)	(0)						
	East from Shaft	9,902		Completed		9,902	0	Invert			0	9,902	0
								Arch			0	9,902	0
	West from Shaft	13,743		Completed		13,743	0	Invert			0	13,743	0
								Arcn			0	13,743	0
UTAH CONSTRUCTION CO.	IRON MT. (W. PORTION)	16,208		Completed		16,208	0	Arch			0	16,208	0
								Invert			0	16,208	0
WINSTON BROTHERS	COXCOMB (From E. Portal)	17,795		Completed		17,795	0	Arch				0	17,795
								Invert				0	17,795
BRODERICK & GORDON	E. EAGLE (From W. Portal)	9,440		Completed		9,440	0	Arch	10	97.5	975	975	8,465
	W. EAGLE (E. PORTION)	(15.845)		Completed		(15.845)	(0)	Invert				0	(15.845)
	East from Adit	7,871				7,871	0	Arch	28	119.5	3,355	7,871	0
	West from Adit	7,974				7,974	0	Arch				7,974	0
	TOTALS Ft.	132,926				132,926	0	Arch	38	113.9	4330	106,641	26,285
	Miles	(25.18)				(25.18)	0	Invert			0	57,592	75,334
AQUEDUCT — FORCE ACCOUNT													
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	EAST COACHELLA	(96,605)				(96,605)	0						
	East Portion	28,512		Completed		28,512	0	Arch			0	28,512	0
								Invert			0	28,129	383
	West Portion	68,093		Completed		68,093	0	Arch	78	69.5	5,424	51,139	16,954
								Invert				0	68,093
	1000 PALMS NO. 1 (FromW.P.)	16,058				16,058	0	Arch	76	56.9	4,322	16,058	0
	1000 PALMS NO. 2	3,838		Completed		3,838	0	Arch			0	3,838	0
								Invert			0	3,838	0
	WIDE CANYON NO. 1	14,305		Completed		14,305	0	Arch			0	14,305	0
								Invert	27	278.4	7,516	7,516	6,789
	WIDE CANYON NO. 2	848		Completed		848	0	Arcn			0	848	0
	SEVEN PALMS (From E. Prtl)	4,810				4,810							
	(From W. Prtl)	11,920		Completed		11,920	0	Arch			0	16,730	0
	LONG CANYON	15,305		Completed		15,305	0	Arch			0	15,305	0
	BLIND CANYON	6,836		Completed		6,836	0	Arch			0	6,836	0
								Invert	17	314.3	5,343	5,343	1,493
	MORONGO NO. 1	5,725		Completed		5,725	0	Arch	23	79.1	1,819	1,819	3,906
	MORONGO NO. 2	1,902		Completed		1902	0	Arch	25	75.7	1,892	1,892	10
	SAN JACINTO	(68,866)				(40.776)	(28,090)						
	Cabazon Shaft to East Portal	8,880			0	8,880	0						
	Cabazon to Lawrence	26,817	90	7.7	690	10,663	16,154						
	Cabazon Pioneer	18,119	90	7.8	706	2,185	15,934						
	Lawrence Adit	5,651	90	2.2	202	1,788	3,863						
	Potrero Pioneer	15,163	90	7.7	697	3,719	11,444						
	Potrero to Lawrence	17,670	90	5.7	513	5,734	11,936						
	Potrero Shaft to West Portal	15,499		Completed		15,499	0	Arch	51	67.8	3,460	3,460	65,406
								Invert	0	0	0	14,953	53,913
	TOTALS Ft.	247,018	180	6.7	1,203	218,928	28,090	Arch	202	83.7	16,917	160,742	86,276
	Miles	(46.78)			(0.23)	(41.46)	(5.32)	Invert	44	292.2	12,859	59,779	187,239
DISTRIBUTION—CONTRACT													
GRIFFITH CO.	CAJALCO OUTLET	2,439		Completed		2,439	0					0	2,439
WEST CONSTRUCTION CO.	MONROVIA NO. 1 (From W.P.)	7,868		Completed		7,868	0		18	36.2	653	7,596	200
	MONROVIA NO. 2 (From Jct.1)	940		Completed		940	0		30	28.5	856	856	0
	MONROVIA NO. 3	(32,105)				(30,215)	(1,890)					0	(32,094)
	East from Adit	11,340		Completed		11,340	0						
	West from Adit }		85	4.8	404	5,642							
	From West Portal }	20,765	85	6.8	577	13,233	1,890						
	MONROVIA NO. 4 (From W.P.)	8,096	75	7.1	530	5,455	2,641					0	8,084
DIXON, BENT BROS & JOHNSON	PASADENA (From West Portal)	12,140		Completed		12,140	0		72	23.8	1,715	6,481	5,659
	SAN RAFAEL No. 1 (FromW.P.)	4,047		Completed		4,047	0					0	4,028
	SAN RAFAEL No. 2 (FromE.P.)	5,669	12	8.3	100	5,669	0					0	5,661
	TOTALS Ft.	73,304	257	6.3	1,611	68,773	4,531	Full	120	26.9	3,224	14,933	58,165
	Miles	13.88			(0.31)	(13.02)	(0.86)	Section			(0.61)	(2.83)	(11.01)

COMPLETED TUNNELS

	CONTRACTOR	TUNNEL	Length in Miles	Work Started	Work Completed
AQUEDUCT	MORRISON-KNUDSEN CO.	Mecca Pass, No. 1, 2 & 3	1.13	7-17-33	2-10-35
	WEST CONSTRUCTION CO.	Whitewater Nos. 1 & 2	1.94	7-18-33	4-15-35
	SHOFNER & GORDON	Hayfield No. 2	1.03	7-8-33	7-27-35
	HAMILTON & GLEASON	Bernasconi	1.18	4-19-33	11-21-35
	J. F. SHEA CO., INC.	Cottonwood	3.81	6-14-33	12-29-35
	HUNKIN-CONKEY CON. CO.	Hayfield No. 1	1.84	10-21-33	1-9-36
	DIXON & BENT BROS.	W. Eagle—West Portion	2.02	9-8-33	3-12-36
	DRAVO CONTRACTING CO.	Valverde	7.20	6-7-33	10-18-36
		TOTALS	20.15		
DISTRIBUTION	J. F. SHEA CO., INC.	Sierra Madre	1.27	9-1-35	10-31-36
	DIXON, BENT BROS. & JOHNSON	Pasadena Extension	1.05	10-5-35	11-24-36
		TOTALS	2.32		

ION PROGRESS

CANAL, CONDUIT, SIPHON & PIPE LINES

November 15 to November 28, 1936

CANAL, CONDUIT AND SIPHON (MILES)

	Completed	Remaining
Excavation	124.90	20.77
Concrete	115.69	28.93
Back Fill	53.45	28.81

DISTRIBUTION PIPE LINE (MILES)

	Completed	Remaining
Excavation	19.40	22.18
Concrete	17.56	24.02
Back Fill	15.34	26.24

AQUEDUCT

SCHED. NO.	CONTRACTOR	FEATURES	Length In Feet	EXCAVATION—Feet			CONCRETE—Feet			BACKFILL—Feet		
				Period	To Date	Remain'g	Period	To Date	Remain'g	Period	To Date	Remain'g
1	AQUEDUCT CONSTR. CO.	Conduit and Siphons	22.025	0	22,025	0	0	22,025	0	0	22,025	0
2	BARRETT & HILP AND MACCO CORP.	Conduit and Siphons	30.569	0	29,314	1,255	0	24,584	5,985	0	22,400	8,169
3		Canal and Siphons	40,499	0	39,574	925	1,286	36,713	3,786	499	4,396	7,949
4	JAHN & BRESSI CONSTR. CO.	Canal and Siphons	53.218	0	53,218	0	0	53,218	0	0	1,992	1,083
5		Canal and Siphons	53.588	0	53,588	0	0	53,588	0	0	2700	1,320
6	WOOD AND BEVANDA	Siphon	15,521	0	15,521	0	0	15,521	0	0	13,043	2,478
7	BARRETT & HILP & MACCO CORP.	Canal and Conduit	27,707	0	27.707	0	0	27,707	0	0	12,170	0
8	WOOD AND BEVANDA	Canal and Siphons	49,339	0	49,339	0	0	49,339	0	0	7.090	800
9	UTAH CONSTRUCTION CO.	Canal, Conduit and Siphons	47,363	122	47,004	359	673	45,360	2,003	400	2,375	3,824
10	AQUEDUCT CONSTR. CO.	Canal and Siphons	44.505	0	44,505	0	0	44.505	0	0	3,594	1,256
11		Canal, Conduit and Siphons	44,003	1,186	24,641	19,362	1,847	4,930	39,073	1,000	2,670	7,653
12	THREE COMPANIES, INC.	Conduit and Siphons	32,977	113	29,552	3,425	11	24,663	8,314	0	23,030	9.947
13	AQUEDUCT CONSTR. CO	Canal, Conduit and Siphons	31.965	0	31,408	557	717	30,535	1,430	0	212	3,453
14	THOMPSON-STARRETT CO.	Conduit and Siphons	32,366	0	32,366	0	0	32,366	0	0	32,366	0
15		Conduit and Siphons	35.849	2,304	13,184	22,665	2,478	9,249	26,600	2,125	7,275	28,574
16		Conduit and Siphons	19,359	0	0	19,359	0	0	19,359	0	0	19.359
17	M. W. D.—FORCE ACCT.	Conduit and Siphons	21,961	299	21,217	744	985	18,401	3,560	1,302	13,830	8,131
18	J. F. SHEA CO.. INC.	Conduit and Siphons	27,537	2,666	24,000	3,537	2,137	23,647	3,890	1,850	16,789	10,748
19	J .F. SHEA CO., INC.	Conduit and Siphons	37,364	0	0	37,364	0	0	37,364	0	0	37,364
20		Siphons	18.618	0	18,618	0	0	1,672	0	0	18,618	0
20 A & B	M. W. D.—FORCE ACCT.	Siphons	735	0	705	30	0	0	735	0	0	735
3	WINSTON BROS. CO. & WILLIAM C. CROWELL	Siphon (Gene Inlet)	1,877	18	1,850	27	60	1,672	205	0	1,478	320
4		Siphon (Copper Basin)	450	276	392	58	0	0	450	0	0	0
	TOTALS		689,395	6,984	579,728	109,667	10,194	536,641	152,754	7,176	208,053	153,163

DISTRIBUTION PIPE LINES

1	AMER. CONC. & STL. PIPE CO.	Precast Concrete Pipe	12,227	0	0	12,227	0	0	12,227	0	0	12,227
2	WESTERN PIPE & STL. CO.	Welded Steel Pipe	54,530	2,133	30,218	24,312	2,376	21,120	33,410	1,570	12,219	42,311
3	AMER. CONC & STL. PIPE CO.	Precast Concrete Pipe	20,124	0	0	20.124	0	0	20.124	0	0	20.124
4			25,867	0	25,867	0	0	25,867	0	0	25,867	0
5			24,895	2,050	12,177	12,718	1,765	11,825	13,070	1,327	10,812	14,083
6	J. F. SHEA CO., Inc.	Precast Concrete Pipe	27,348	1,790	12,664	14.684	1,761	12,430	14,918	2,115	11,924	15,424
7			30,044	0	0	30,044	0	0	30,044	0	0	30.044
8	UNITED CONC. PIPE CORP.	Precast Concrete Pipe	24,525	1,243	21,518	3,007	1,552	21,483	3,042	1,500	20,178	4,347
	TOTALS		219.560	7,216	102,444	117,116	7,454	92,725	126,835	6,512	81,000	138,560

Miscellaneous Construction

November 15 to November 28, 1936

AQUEDUCT PUMPING PLANTS AND APPURTENANT WORKS

CONTRACTOR	FEATURES	EXCAVATION—Cu. Yds.				CONCRETE—Cu. Yds.				STEEL—Tons			
		Est.Quan.	Period	To Date	%	Est.Quan.	Period	To Date	%	Est.Quan.	Period	To Date	%
WINSTON BROS. CO. & WILLIAM C. CROWELL	Intake Plant	102,400	2,811	104,314	100.	18,145	635	635	3.5	1,712			
	Gene Plant	92.600	3,650	89,130	96.3	13,370	1,231	5,361	40.1	2,052	5.2	29.2	1.4
WOOD AND BEVANDA	Iron Mt. Plant	358,700	4,676	231,632	64.6	19,897	2,292	5,428	27.3	1,707	308.3	347.5	20.3
L. E. DIXON CO.	Eagle Plant	227,695	4,066	212,496	93.3	21,122	52	950	4.5	2,160	0	39.2	1.8
L. E. Dixon & Case Const. Co.	Hayfield Plant	328,900	33,962	135,890	41.3	32,319	0	0		2,738	0	0	0
	TOTALS		49,165	773,462			4,210	12,374			313.5	415.9	

PARKER RESERVOIR—SIX COMPANIES, INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnels—Excav.	3,463 Ft.	0	3,463	100
Diversion Tunnels—Concrete	3,363	0	3,363	100
Dam Excavation	1,391,000 C.Y.	197,100	511,879	36.8
Dam Concrete	277,900 C.Y.	0	0	0

CAJALCO RESERVOIR—GRIFFITH COMPANY

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnel	2.000 Ft.	0	2,000	100
Dam & Dike Excavation	651,000 C.Y.	2,015	464,862	71.4
Dike Fill	4,113,000 C.Y.	114,800	261,800	79.3
Dam Fill	3,410,000 C.Y.	8,200	889,500	26-1

BOULDER TRANSMISSION LINE—FRITZ ZIEBARTH

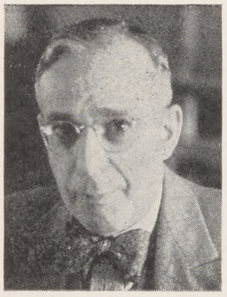
FEATURES	Length-Line Mi.	Period	To Date	Percent
Footings Constructed	237.0	3.0	181.0	76.4
Towers Erected	237.0	9.0	161.0	67.9
Wire Strung	237.0	16.0	147.0	62.0

COMPLETED FEATURES

CANAL, CONDUIT AND SIPHON

CONTRACTOR	FEATURE AND NAME OR SCHEDULE	Length in Miles	Work Started	Work Completed
UNITED CONC. PIPE CO	LITTLE MORONGO SIPHON	0.13	2-27-34	8-20-34
M.W.D.—FORCE ACCT	FAN HILL COND. & SIPHON	0.32	10-21-33	11-19-34
MORRISON-KNUDSEN CO.	BIG MORONGO & SAN ANDREAS SIPHONS	1.86	2-12-35	9-16-36
GRIFFITH COMPANY	Sch. No. 20-C, 21, 22, 23, 23A	12.79	1-5-35	10-13-36
	TOTALS	15.10		

Wanted--Missing Link, Please Expedite



S. A. JOSEPH
M. W. D. Purchasing Agent

The "missing link" is generally associated with the Darwin theory, and "dead men" commonly call for the coroner. However, both can be, and are frequently purchased by Saul Joseph, the M. W. D. Purchasing Agent, as part of the routine business of his department. The missing link in this case does not refer to an offspring of the ape family, but is instead an extra link to repair or tie together two parts of a chain.

Dead men, likewise, refer not to cadavers, but to the weights usually buried in the ground to provide anchorage for cables and guy wires. The purchasing of such items, and thousands of other common and uncommon articles is all a part of the day's business of the Purchasing Division as it supplies the needs of the aqueduct builders.

The process of buying the aforesaid missing link isn't as simple, however, as its description might indicate. The requisition for it was probably dated December 4, somewhere east of Los Angeles, and the requisitioner had added at the bottom "Please expedite"—with the casual explanation that the item would be urgently required not later than 7 A. M. on December 5. Due to the fact that the request doesn't come via air mail or special messenger, it doesn't arrive in the offices of the Purchasing Division before December 7. Even when it does arrive, Mr. Joseph can't just call up the zoo—pardon, we mean —supply house, and ask for one missing link to be sent immediately to Camp X.

Because purchasing the missing link isn't the only transaction that the District is handling on that day, it is necessary for the requisition to be put through an exacting procedure. Here are some of the highlights on its journey:

The requisition is first checked over as to form and proper description of articles wanted, and the original is then sent to the General Manager's office for approval. Following this it must also be approved by the Controller's office before any buying action can be taken. When the approved request has been returned to Purchasing, the Purchasing Agent gives it his own "O.K.", and it is then assigned to one of the buyers—each of whom specializes in certain general types of materials.

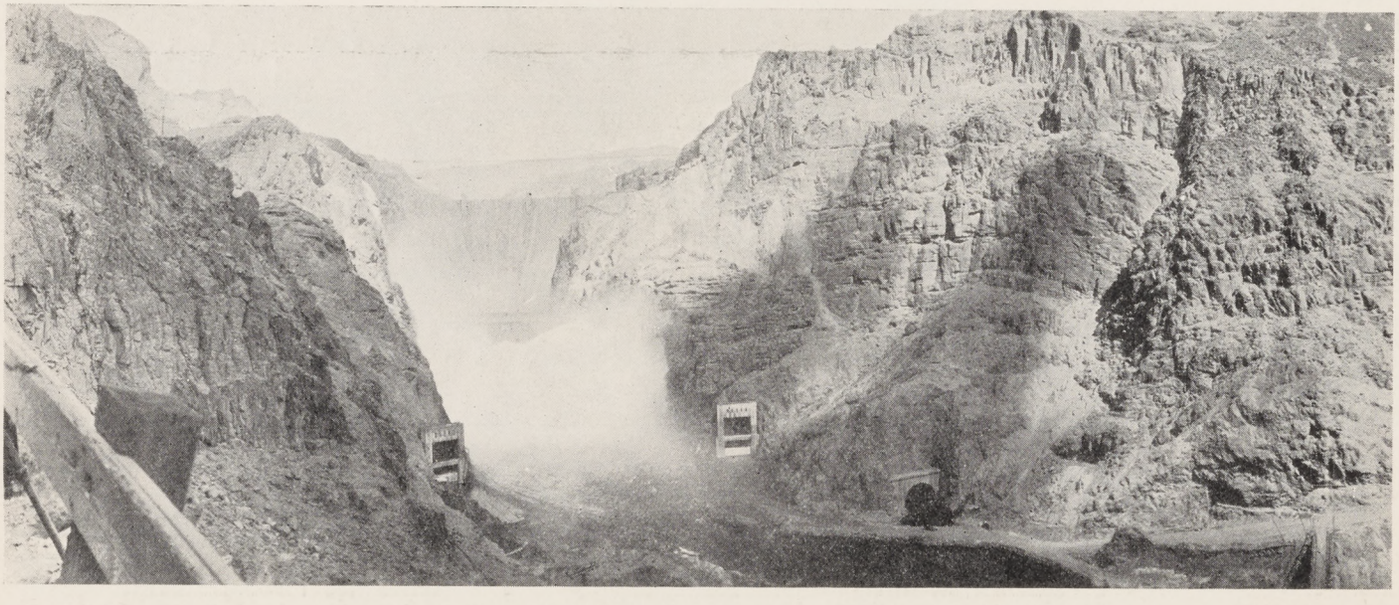
Doing his part to hurry along the delivery of the item, and because its cost is relatively small, the buyer communicates directly with a number of supply houses and secures price quotations. After these quotations are compared, the award is made to the lowest bidder. (If the price of the article is more than $500, however, it is necessary for the vendors to submit written "counter" quotations, and if more than $5,000, the District must publicly advertise for bids

(Continued on Page 8)

For old time's sake. This picture out of the album shows C. C. Elder, the late William Mulholland, and General Superintendent James Munn crossing the Colorado River on the ferry at Parker in April, 1933. "Chief" Mulholland first navigated the Colorado River in 1877.

FARGO TAKES LEAD IN POURING RACE

Fargo lining crews placed 4,669 cubic yards of concrete in the arch of that tunnel during the week ending November 28, to exceed the figure given in the last NEWS of 4,633 cubic yards poured by the 1000 Palms crews. Single unit Pumpcretes are being used in both tunnels.



Another view of the twelve valves in action at Boulder Dam. Even that great structure is dwarfed by Nature's abutments.

NEWS FROM FIELD AND OFFICE

A party of 25 members of the San Diego Engineers' Club inspected the Cajalco Reservoir and the West Portal concrete operations at San Jacinto on Sunday, November 28. Included in the group was Fred D. Pyle, Hydraulic Engineer for the City of San Diego, and F. F. Evenson, president of the San Diego club.

C. P. "Charley" Gail, master mechanic for Winston Brothers Company. The far away look in his eye was developed while trying to watch both the Coxcomb and East Iron Mountain tunnel jobs. He's been on the job since work was started on the Coxcomb tunnel, September 11, 1933.

A belated notice from Banning tells of the arrival on October 28 of Henry C. Bruce, Jr., in the household of Henry Bruce of the Banning engineering force. Henry Sr. states that the mother named the boy—all contrary opinions notwithstanding. Henry Bruce has been on the job since the days when it was the Colorado River Surveys of the Department of Water and Power.

* * *

Charles F. Van de Water of the Electrical Division returned to Los Angeles on November 21 after a nine months stay at Massena, N. Y., where he has been inspecting District materials in the plant of the Aluminum Co. of America. He was only home a week when he was assigned a similar mission at the Anaconda Wire and Cable Co. plant in Great Falls, Montana. Join the Electrical Division and see the world.

* * *

Gus McGinnus, sub-station operator, has been transferred to the Electrical Division as an inspector.

Aqueduct Temperatures
November 16 to November 30

	Max.	Min.
Div. 1	85°	44°
Div. 2	86°	46°
Div. 3	86°	41°
Div. 4	85°	52°
Divs. 5 & 6	86°	35°

One of the most interesting items to come to the NEWS this week, is a note from George Campbell who worked on the Coachellas and at San Jacinto until April of this year. Campbell is now in Palmer, Alaska—this city being the center of activities of the Matanuska Valley, the Federal Government's resettlement project in the far north. Along with the note was enclosed the first printed copy, dated October 26, 1936, of the Matanuska Valley Pioneer, the valley's newspaper. Palmer's location is carried on the first page as 61-30 N. Latitude, 149-15 W. Longitude.

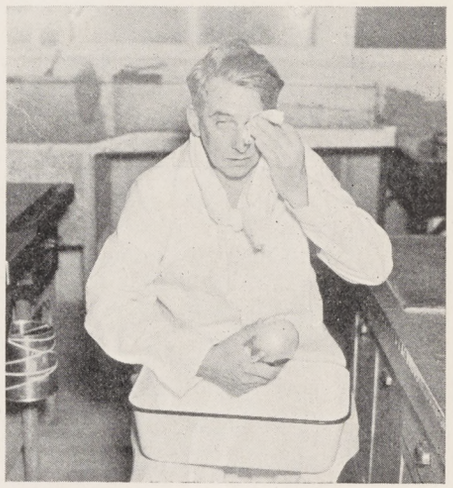
* * *

Thanksgiving Day was celebrated in real Turkey Day fashion at the J. F. Shea Camp on Schedule 18. As a special treat, many of the wives and children of the employees attended the dinner. Capping the festivities was a "toast" to Supt. "Curley" Rennebohm written by Meredith Overpeck, daughter of the chief inspector on the job.

HELLO, HELLO and HELLO

You've probably talked to these girls even if you don't know them, since they handle the telephone exchange in the Los Angeles headquarters of the M.W.D. From left to right are: Bell Cawley, Dorothy Lovejoy, and Gertrude Johnson. Miss Cawley and Miss Johnson are aqueduckers from way back, having been with the District since June 27, 1931.

Carl Marsteller, who for the past year has worked in the Electrical Division helping to push along materials for the pumping plants and transmission lines, resigned from the District on December 8 to accept a position as office manager for a Torrance firm who manufactures automobile steam cleaning machinery.



The process of starting in as a cook's helper is a sad one. This picture of John Sharkey (nope, no relation) was taken on the first day he went to work in the kitchen at Division 3 headquarters. As you have guessed, the object de art in his hand is a well flavored onion.

Bern Miller who works for the Distribution Division on pipe line construction has recently returned from a tour of active duty with the 63rd Coast Artillery. Bern is another "shavetail."

* * *

Michael LaScala, inspector on Division 3, and Helen Lorraine were married in Los Angeles on November 18. In order to make the event a complete success, "Mike" also acquired a new car.

* * *

W. A. Morgan has moved in from the Operating Division to the Electrical Mechanical Division.

* * *

Once an aqueducker, always an aqueducker (permission received by Boy Scouts of America). Del Laneville is back on the job again, this time with the Aqueduct Construction Co. in Division 3. After completion of the work in Yosemite Valley where he was working for the Morrison-Knudsen Co., he was loaned by that company to the Aqueduct Co. for work in connection with schedules 11 and 13. Sounds like the movies, loaning stars around.

Missing Link

(Continued from Page 6)

for a three-day period.) After making the award the buyer writes out a confirming purchase order. This is typed, and reproduced on a ditto machine and from nine to nineteen copies of the purchase order are run off, depending on the article being bought and its destination.

The actual purchase does not complete the work of the Purchasing Division. Materials purchased f.o.b. origin must be handled by the Traffic section of the Division which arranges all matters pertaining to shipping and routing. The "expedite" desk in this section must follow through on *every* purchase order to see that it is actually delivered by the date called for on the order—which is as near the date on the requisition as is humanly possible. The Purchasing Division is not only responsible for the delivery of all items purchased by it, but also for the thousands of carloads of "District furnished materials" sent to aqueduct contractors. Individual cars of materials are not only checked as to the time of leaving their origin, but are also checked at various points along their route.

This by no means tells all of the story of the many details of the Purchasing Division, which, by the way, sells things as well as buys them—being responsible for the disposal of saleable salvage materials. Nor are the buying activities limited to such simple items as missing links. In the month of October alone, 2,465 individual purchase orders were handled—amounting to approximately $284,000.

Such an assortment of orders cover every conceivable article that might go into an aqueduct, and one or two that have even the Purchasing Agent guessing. The first requisition on the P. A.'s desk this morning calls for a mucking machine, the next for a set of shoes for the M.W.D. mule at Berdoo, the next for 5 cars of lumber (it is estimated that 100 million board feet have been purchased since the job began), and the next, of all things, a dozen children's rubber play balls—for the Banning testing lab. And so on—to the missing link.

A note from E. L. "Jerry" Crawford, erstwhile senior inspector for the District on open work construction, who is working on the Grand Coulee Dam in Washington. He has hopes for a vacation early in January when he will come down to Southern California to thaw out and visit his friends on the aqueduct.

Who's Who On the Aqueduct

N. F. Jahn

W. J. Neale

F. W. Case

N. F. JAHN

Jahn and Bressi Construction Co.

Born Trenton, New Jersey, October 22, 1886 . . . Graduated as C. E. from Princeton University in '09 . . . As a general contractor has been doing heavy construction and highway work in the west from Canada to Mexico for 27 years . . . Included have been sea walls, tunnels, bridges, piers, etc. . . . 1922 his firm projected Hill Street in Los Angeles from Washington Blvd. to Santa Barbara Ave. . . . 1930 built 27-mile Ridge Route cut-off. . . . Built Lake Youngs Tunnel project for city of Seattle . . . Colorado River Aqueduct schedules 4, 4A, 5, and 5A. . . His hobby is traveling, having been to the Orient several times, and many trips to Europe. Was in Russia at the beginning of the five year plan in 1928. Around the world in 1931, and went to the Olympic Games and various European countries via the airship Hindenburg in summer of 1936. . . . Is married and has two daughters and a son.

W. J. NEALE

Resident Engineer, Division 2, M. W. D.

Born Tacoma, Washington, March 29, 1892. . . . Attended University of Washington. . . . 1911-1917, U. S. Reclamation Service, Yakima project, as chainman, inspector, assistant engineer, and resident engineer. . . . 1918-1919, Corps of Engineers, U. S. Army. . . . 1919-1920, engineer for Sunnyside Irrigation District, and for Columbia Irrigation District. . . . 1920-1921, engineer for Spokane Valley Land Co. . . . 1921-1922, engineer for La Corona Petroleum Co., Tampico, Mexico. . . . 1922-1931, supervisor for the Standard Oil Co. of Calif., El Segundo refinery. . . . 1932-1933, with U. S. Reclamation Service at Boulder Dam. . . . 1933 to date, with M. W. D., preliminary location surveys, distributing system, and resident engineer at Division 2. . . . He is married and has one son.

F. W. CASE

Macco Construction Company

Born July 19, 1902, in Willits, California. . . . 1918-1922, bridge construction for Parlier and Lowry Co., Visalia, Calif. . . . 1922 to 1932 with the Cement Gun Construction Company, Los Angeles. . . . Was superintendent for company on tunnel lining work, spent one year in Oregon, and balance of time as manager of Southern California territory. . . . 1932-1935, General Superintendent for Case Construction Company, general contracting around Los Angeles, and gunite lining of tunnels, San Gabriel Dam No. 2. . . . Since 1935 has been manager of gunite department for the Macco Construction Co. . . . At present time this company has sub-contract with Western Pipe and Steel Co., for gunite coating on steel pipe sections for Distribution schedule 2S, coating being applied at yard in Arlington, Calif.

M. W. D. Guest Houses Accomodate Many

One of the sidelights on building an aqueduct is caring for the many guests and distinguished visitors who travel over the line. A glance through the register at one of the District's guest houses, Division 3 headquarters, for example, shows that since it was opened in 1933, more than 1950 people have registered, and probably many more have stayed in the guest house overnight. Washington, D. C., leads in residents from one city, and, excluding District employees, New York leads all other states. The most interesting signature is that of Charles Owens, staff artist for the Los Angeles Times. His autograph in this, and other guest books, consists of a pencil sketch of camp scenes.